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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/717,589	11/21/2003	Hidemasa Sawada	117827	9393
25944 7590 03/27/2007 OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320			EXAMINER SHAH, MANISH S	
			ART UNIT 2853	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		03/27/2007	PAPER	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/717,589

Applicant(s)

SAWADA, HIDEMASA

Examiner

Manish S. Shah

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 February 2007.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-4,6-9 and 11-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4,6-9 and 11-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

1. Claims 13-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
2. Claim 13 & 14 recites the limitation "after coating" in the 2<sup>nd</sup> line of the claims. There is insufficient antecedent basis for this limitation in the claim.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1 & 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yatake et al. (# US 5746818) in view of Koitabashi et al. (# US 6582047).

Yatake et al. discloses an image recording method (column: 13, line: 5-15) including a pretreatment step of causing a pretreatment liquid containing propylene glycol monopropyl ether (column: 12, line: 35-45; column: 5, line: 18-26) and a cationic substance to adhere on a medium (column: 11, line: 40-65); and a recording step of

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forming after the pretreatment step, an image on the recording medium by using an aqueous pigment ink containing a pigment (column: 3, line: 10-65) and resin microparticles (water soluble resin) (column: 10, line: 19-45) having a negative surface charge (column: 13, line: 60-67; column: 14, line: 1-10). They also disclose that the pretreatment liquid contains same water soluble solvent as the ink composition (column: 12, line: 35-45), which contains dipropylene glycol monopropyl ether in an amount of 5 to 60% by weight (column: 5, line: 25-27) and cationic substance in an amount of 1 to 10% by weight (column: 12, line: 13-17). They also disclose that the pigment contains in an amount of 2 to 15% (column: 3, line: 60-62), and the pigment, which has an average of volume particle size of 10 to 300 nm (column: 23, line: 20-23).

Yatake discloses all the limitation of the image recording method except that the medium is a cloth.

Koitabashi et al. (047) teaches that the to get the excellent ink absorption printing medium in image forming method, the print medium is selected from paper, synthetic paper, cloth and non-woven cloth (column: 6, line: 1-15).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the printing medium of Kubota et al. by the aforementioned teaching of Koitabashi et al. (047) in order to excellent ink absorption printing medium, which gives high quality printed image.

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2. Claims 1, 3-4 & 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kubota et al. (# US 6086197) in view of Yatake (# US 5746818) and Koitabashi et al. (# US 6582047).

Kubota et al. discloses an image recording method (see Abstract) including a pretreatment step of causing a pretreatment liquid (reaction solution) containing dipropylene glycol (column: 3, line: 10-25; column: 5, line: 20-45) and a cationic substance to adhere on a medium (column: 3, line: 60-67); and a recording step of forming after the pretreatment step, an image on the recording medium by using an aqueous pigment ink containing a pigment (column: 6, line: 55-67; column: 7, line: 1-20) and resin microparticles, wherein resin particle is resin emulsion (column: 7, line: 19-45) having a negative surface charge. They also disclose that the pretreatment liquid contains propylene glycol in an amount of 2 to 20% by weight (column: 5, line: 25-27) and cationic substance in an amount of 5 to 25% by weight (column: 4, line: 1-10). They also disclose that the pigment contains in an amount of 2 to 15% (column: 7, line: 15-25), and the resin emulsion has an average of volume particle size of 5 to 100 nm (column: 7, line: 35-40).

Kubota et al. differs from the claim of the present invention is that (1) the pretreatment liquid contains dipropylene glycol monopropyl ether, and a pigment has an average of volume particle size of 100 to 5 micrometer. (2) The image recording method except that the medium is a cloth.

Yatake teaches that to improve the penetration of the ink and prevent the clogging of the nozzle, the pretreatment liquid contains same water soluble solvent as

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the ink composition, which contains dipropylene glycol monopropyl ether in the amount of 5 to 10% by weight (column: 5, line: 1-26; column: 12, line: 35-45), and the pigment has an average of volume particle size of 10 to 300 nm (column: 23, line: 20-23).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the pretreatment liquid of Kubota et al. by the aforementioned teaching of Yatake in order to improve the penetration of the ink and prevent the clogging of the nozzle, which gives high quality printed image.

Koitabashi et al. (047) teaches that the to get the excellent ink absorption printing medium in image forming method, the print medium is selected from paper, synthetic paper, cloth and non-woven cloth (column: 6, line: 1-15).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the printing medium of Kubota et al. by the aforementioned teaching of Koitabashi et al. (047) in order to excellent ink absorption printing medium, which gives high quality printed image.

3. Claims 2 & 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koitabashi et al. (# US 2002/0044185 A1) in view of Yatake (# US 5746818) and Koitabashi et al. (# US 6582047).

Koitabashi et al. discloses an image recording method (column: 13, line: 5-15) including a pretreatment step of causing a pretreatment liquid containing propylene glycol ([0114]) and a cationic substance to adhere on a medium ([0110]); and a black recording step of forming after the pretreatment step, an image on the recording

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medium by using a black aqueous pigment ink containing a pigment ([0115], [0053]-[0090]) and resin microparticles (water soluble resin) (see Examples) having a negative surface charge (figure: 1-6); and a color recording step of forming after a specific amount of time has elapsed since the execution of the black recording step, an image on the medium by using a colored aqueous pigment ink containing a pigment other than the black pigment and resin microparticles having a negative charge ([0115]-[0125]). They also disclose that the pretreatment liquid contains propylene glycol in an amount of 5 to 40% by weight ([0114]) and cationic substance in an amount of 0.01 to 10% by weight ([0110]). They also disclose that the pigment contains in an amount of 1 to 10% ([0078]), and the pigment, which has an average of volume particle size of 0.05 to 0.3 micrometer ([0067]).

Koitabashi et al. differs from the claim of the present invention is that (1) the pretreatment liquid contains dipropylene glycol monopropyl ether, and in the amount of 5 to 10% by weight. (2) The image recording method except that the medium is a cloth.

Yatake teaches that to improve the penetration of the ink and prevent the clogging of the nozzle, the pretreatment liquid contains same water-soluble solvent as the ink composition, which contains dipropylene glycol monopropyl ether in the amount of 5 to 10% by weight (column: 5, line: 1-26; column: 12, line: 35-45).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the pretreatment liquid of Koitabashi et al. by the aforementioned teaching of Yatake in order to improve the penetration of the ink and prevent the clogging of the nozzle, which gives high quality printed image.

Koitabashi et al. (047) teaches that to get the excellent ink absorption printing medium in image forming method, the print medium is selected from paper, synthetic paper, cloth and non-woven cloth (column: 6, line: 1-15).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the printing medium of Koitabashi et al. (185) by the aforementioned teaching of Koitabashi et al. (047) in order to excellent ink absorption printing medium, which gives high quality printed image.

4. Claims 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koitabashi et al. (# US 2002/0044185 A1) in view of Yatake (# US 5746818) as applied to claims 2 & 11-12 above, and further in view of Kubota et al. (# US 6086197).

Koitabashi et al. and Yatake discloses all the limitation of the image recording method except that the resin microparticles are a resin emulsion.

Kubota teaches that to inhibiting the penetration of the colorant, accelerating the fixation, and rubbing resistance printed image, the ink composition includes the pigment and resin emulsion (column: 7, line: 20-60) in an amount of 0.1 to 40% by weight (column: 8, line: 20-24) and has a particle size of 5 to 100 nm (column: 7, line: 35-38).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the pretreatment liquid of Koitabashi et al. as modified by the aforementioned teaching of Kubota in order to inhibiting the penetration of the colorant, accelerating the fixation, and rubbing resistance printed image.

***Response to Arguments***

5. Applicant's arguments filed on 02/15/2007 have been fully considered but they are not persuasive.

6. Applicant argued that Yatake fails to disclose using dipropylene glycol monopropyl ether in reaction solution, which is not persuasive. In column: 5, line: 1-6, Yatake clearly teaches that glycol ethers are added in the ink composition to improve the penetration of the ink into recording medium, and in column: 12, line: 20-30, it is also clearly teaches that the glycol ethers are added in the reaction solution to improve the penetration of the reaction solution in the recording medium, and in column: 12, line: 35-45, Yatake clearly teaches that "the reaction solution used in the ink jet recording method according to the present invention may suitably contain a component which may be added to the above ink composition.", which means that the all these ethers are taught in the ink composition and in the reaction solution are interchangeable. This means that the dipropylene glycol monopropyl ether can contain in the reaction and in the ink composition. Therefore, Yatake discloses that reaction solution (pretreatment liquid) containing dipropylene glycol monopropyl ether.

7. The ink composition of Examples (B5-B8) and reaction solution of (A1-A4) had same water-soluble organic solvents. This means that the reaction solution (pretreatment liquid) can have exactly same water-soluble organic solvent as ink composition. Therefore, Yatake teaches that the reaction solution contains dipropylene glycol monopropyl ether.

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8. Applicant argued that Koitabashi et al. fails to teach use a pretreatment liquid and an aqueous ink, which is not persuasive. Koitabashi clearly teaches that inkjet recording method comprises the steps of ejecting the reaction solution and the pigment ink (figure: 4-6). However an Examiner used this reference for recording medium only. Koitabashi et al. clearly teaches that the any kind of recording material (paper or cloth) can be use in inkjet recording method (column: 6, line: 5-20). Therefore, it is obvious to combine Koitabashi et al. reference with Yatake reference.


### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Manish S. Shah whose telephone number is (571) 272-2152. The examiner can normally be reached on 8:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen D. Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Manish S. Shah  
Primary Examiner  
Art Unit 2853

MSS

3/20/07